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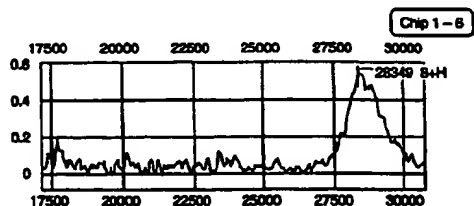
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- (51) International Patent Classification⁷: G01N 33/574 (72) Inventor: WATKINS, Brynmor, A.; 99 Summer Street, Waltham, MA 02452 (US).
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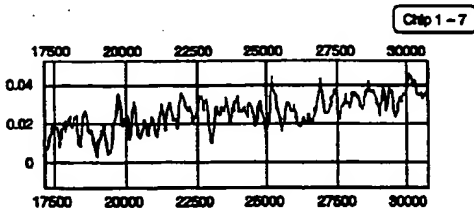
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

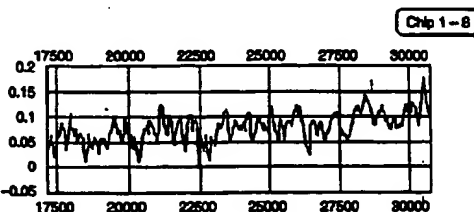
(54) Title: IDENTIFICATION OF DISEASE MARKERS INVOLVING MASS-BASED-SEPARATION



A



B



C

(57) Abstract: The invention provides mass spectroscopic-based methods and compositions for identifying disease markers, for example, cancer markers, in a mammal. In particular, the mass-spectroscopic-based methods and compositions facilitate the rapid identification of cancer markers from tissue or body fluid samples. The cancer markers, once identified, can then be used as targets in methods for detecting or treating cancer in the mammal.

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INTERNATIONAL SEARCH REPORT

Int'l. Application No.
PC/US 00/31492

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01N33/574

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, EMBASE, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CHONG BATHSHEBA E ET AL: "Rapid screening of protein profiles of human breast cancer cell lines using non-porous reversed-phase high performance liquid chromatography separation with matrix-assisted laser desorption/ionization time-of-flight mass spectral analysis." RAPID COMMUNICATIONS IN MASS SPECTROMETRY, vol. 13, no. 18, 1999, pages 1808-1812, XP001006015 ISSN: 0951-4198 cited in the application the whole document — -/-	1,9, 15-20

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

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"E" earlier document but published on or after the international filing date

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"S" document member of the same patent family

Date of the actual completion of the international search

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Tuynman, A

INTERNATIONAL SEARCH REPORT

International Application No.

PC1/US 00/31492

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 07036 A (SCHULZ KNAPPE PETER ;FORSSMANN WOLF GEORG (DE); OPITZ HANS GEORG () 19 February 1998 (1998-02-19) abstract page 6, line 4 - line 25 page 7, line 14 -page 8, line 15 claims 1-3,6-10	1-4, 9-11,15, 17, 21-23,29
X	& DE 196 32 521 A 19 February 1998 (1998-02-19) abstract page 2, line 25 - line 31 claims 1-7	1-4, 9-12,15, 17-23, 27, 29-32, 35-50
X	RASMUSSEN HANNE H ET AL: "Towards a comprehensive database of proteins from the urine of patients with bladder cancer." JOURNAL OF UROLOGY, vol. 155, no. 6, 1996, pages 2113-2119, XP001006003 ISSN: 0022-5347 abstract page 2113, right-hand column, line 13 -page 2114, left-hand column, line 16 figures 2,3 table 1	1-8, 17-20
A		21-26, 28-32
X	JUNGBLUT P R ET AL: "PROTEOMICS IN HUMAN DISEASE: CANCER, HEART AND INFECTIOUS DISEASES" ELECTROPHORESIS,DE,WEINHEIM, vol. 20, no. 10, July 1999 (1999-07), pages 2100-2110, XP000870393 ISSN: 0173-0835	1-4, 15-20
A	page 2102, left-hand column, line 1 -right-hand column, line 4 abstract page 2101, left-hand column, line 14 - line 41; figure 1 -/-	21-32

INTERNATIONAL SEARCH REPORT

International Application No
PC1/US 00/31492

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HABETS W J ET AL: "ANALYSIS OF A COMPLEMENTARY DNA CLONE EXPRESSING A HUMAN AUTOIMMUNE ANTIGEN FULL-LENGTH SEQUENCE OF THE U2 SMALL NUCLEAR RNA-ASSOCIATED B ANTIGEN" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES, vol. 84, no. 8, 1987, pages 2421-2425, XP002169270 1987 ISSN: 0027-8424 abstract	33,34
P,X	WATKINS B ET AL: "Identification of serum nuclear matrix protein markers of breast cancer using surface enhanced laser desorption-ionization (SELDI) mass spectroscopy." BREAST CANCER RESEARCH AND TREATMENT, vol. 64, no. 1, November 2000 (2000-11), page 98 XP001001191 23rd Annual San Antonio Breast Cancer Symposium;San antonio, Texas, USA; December 06-09, 2000 ISSN: 0167-6806 the whole document	1-50
P,X	WATKINS B ET AL: "Surface enhanced laser desorption-ionization (SELDI) mass spectroscopy in the discovery of serum markers for breast cancer." TUMOR BIOLOGY, vol. 21, no. Supplement 1, September 2000 (2000-09), page 35 XP001001193 28th Meeting of the International Society for Oncodevelopmental Biology and Medicine;Munich, Germany; September 08-13, 2000 ISSN: 1010-4283 the whole document	1-50

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Present claims 33 and 34 relate to products defined by reference to a desirable characteristic or property, namely being identifiable by the methods of claim 1 and 32, respectively.

The claims cover all products having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the products prepared in example 2, mentioned in the description at page 25, line 27 to page 26, line 11.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/31492

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		AU 720626 B	08-06-2000
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		CN 1233326 A	27-10-1999
		EP 0922226 A	16-06-1999
		PL 331612 A	02-08-1999